

## ABSTRACT OF THE DISCLOSURE

2 Methods, systems, and computer program products for negotiating a secure  
3 end-to-end connection using a proxy server as an intermediary. The client first negotiates a  
4 secure connection between the client and the proxy so that any credentials exchanged will be  
5 encrypted. After the exchange of authentication credentials, the secure client-proxy  
6 connection is altered so that no further encryption takes place. The client and server then  
7 negotiate a secure end-to-end connection through the proxy, with the secure end-to-end  
8 connection being encapsulated within the insecure client-proxy connection. In this way, the  
9 overhead of creating a separate client-proxy connection for the secure end-to-end connection  
10 may be avoided, but the insecure client-proxy connection introduces only minimal overhead  
11 because it no longer encrypts any data that it carries.

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